

communicatively coupled to an analog-to-digital converter (A/D) input 310 of microprocessor 42. In an alternative embodiment, A/D 310 may be a stand alone device mounted to controller 40.

Controller 40 also includes output section 50. In one embodiment, output section 50 includes relay solenoid driver devices 312 coupled to microprocessor 42. In an alternative embodiment, output section 50 includes solid state solenoid driver devices 314 coupled to microprocessor 42.

Configuration section 52 includes a plurality of user selectable jumpers 316 to facilitate controlling the operation of controller 40. User interface 46 includes at least one LED 318 to provide visual indication of, for example, user interface update status.

A plurality of modular I/O boards may be coupled to microprocessor 42 through external connection 320. The plurality of I/O boards may include a generator control board 322, a load shed board 324, and a three phase sense board 326.

Microprocessor 42 includes a plurality of timers 328 that facilitate controlling the operation of controller 40. Timers 328 may include, for example, a generator cool down timer 330, a generator warm-up timer 332, a loss of power delay timer 334, a generator fail-to-start timer 336, a generator crank timer 338, a generator pause timer 340, a generator overload timer 342 and an utility stabilization before switchback timer 344. Microprocessor 42 also includes an exercise clock. Timers 328 and clock 346 may be imbedded in a software segment running on microprocessor 42 and/or occupy registers in microprocessor 42.

## REMARKS

The Office Action mailed November 4, 2002 has been carefully reviewed and the foregoing amendment and following remarks have been made in consequence thereof.

Claims 1-28 are now pending in this application. Claims 1-28 stand rejected.

The objection to the drawings under 37 CFR 1.83(a) is respectfully traversed. Applicant has amended the drawings by adding Figure 3. Figure 3 is a detailed block diagram of a portion of the automatic transfer switch controller as claimed in the present